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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/628,286

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EXAMINER

LIEW, ALEX KOK SOON

ART UNIT

PAPER NUMBER

2624

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/628,286	Applicant(s) AKAHORI, SADATO	
	Examiner Alex Liew	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-6 and 11-14 is/are rejected.
- 7) ☒ Claim(s) 2 and 7-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

The amendment filed on July 11, 2007 is entered and made of record.

### **Response to Applicant's Arguments**

On page 8 of the response, the applicant stated: [Form instance, the "color blocks" in figure 6 of Holter do not disclose or suggest "generating a plurality of block regions each having a predetermined number of pixels and having a smaller area than any one of the object regions by dividing each of the generated object regions."]

The examiner agrees with the applicant. However, in the examiner's new search Corset (US pat no 5,995,668) discloses generating a object regions by dividing an image into objects, and generating a plurality of block regions each having a predetermined number of pixels (see figure 6, the original image is divided into two regions after the first tier) and having a smaller area than any one of the object regions by dividing each of the generated object regions (see figure 6, the second is then divided into four regions, middle tier) and recognizing the types of the respective blocks (see column 3, lines 1 to 3, each block is associated with a label which defines the area).

Corset does not disclose totaling up occurrence frequency of each of the types of the respective block regions and recognizing the type of each of the object regions based on a result of the totaling.

Ohmae (US pat no 6,188,787) discloses totaling up totaling up occurrence frequency of each of the types of the respective block regions in each of the object region and recognizing the type of each of the object based on a result of the totaling (see column 2, lines 52 to 55).

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It would have been obvious to one having ordinary skill in the art at the time of the invention was made to include totaling up occurrence and recognizing object region based on totaling because some object occurs more frequent than others, for example imaging sections of a forest, what you will see more are trees, so to reduce system processing of the image of the forest when the system detects objects of the same occurring often, than the object is recognized to be the object that occurs the most, in the example it will be the trees.

The combination of Corset and Ohmae disclose the claimed invention of claim 1.

### ***Claim Objections***

Claims 2 and 7 – 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With regards to claim 2, the examiner cannot find any applicable prior and / or any suggestions disclosing calculating a type reliability value representing *likelihood* of each of the object regions being of the recognized type in combination with the rest of the limitations of claim 2 and all of claim 1.

With regards to claim 7, see rationale for claim 2.

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Tabata (US pat no 6,879,417) discloses an image processing method according to claim 1, further comprising the steps of calculating a type value representing likelihood of each of the object regions being of the recognized type, setting an image processing condition for each of the object regions by using the type value and carrying out image processing on each of the object regions by using the image processing condition (see col. 2 lines 51 – 55 – the type of image represents an image type value, based on the type of image the system will perform image processing based on the recognized image), but does not disclose calculating a type reliability value representing likelihood of each of the object region.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corset ('668) in view of Ohmae ('787).

With regards to claim 1, Corset discloses generating a object regions by dividing an image into objects, and generating a plurality of block regions each having a predetermined number of pixels (see figure 6, the original image is divided into two regions after the first tier) and having a smaller area than any one of the object regions

by dividing each of the generated object regions (see figure 6, the second is then divided into four regions, middle tier) and recognizing the types of the respective blocks (see column 3, lines 1 to 3, each block is associated with a label which defines the area).

Corset does not disclose totaling up occurrence frequency of each of the types of the respective block regions and recognizing the type of each of the object regions based on a result of the totaling.

Ohmae discloses totaling up occurrence frequency of each of the types of the respective block regions in each of the object region and recognizing the type of each of the object based on a result of the totaling (see column 2, lines 52 to 55).

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to include totaling up occurrence and recognizing object region based on totaling because some object occurs more frequent than others, for example imaging sections of a forest, what you will see more are trees, so to reduce system processing of the image of the forest when the system detects objects of the same occurring often, than the object is recognized to be the object that occurs the most, in the example it will be the trees.

The combination of Corset and Ohmae disclose the claimed invention of claim 1.

With regards to claim 3, see the rationale and rejection for claim 1.

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3. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corset ('668) in view of Ohmae ('787) as applied to claim 3 further in view of Holter (US pat no 4,731,859).

With regards to claim 4, Corset discloses all the limitations discussed in claim 3, but does not disclose block characteristic quantity extraction, mapping means and type output means.

Holter discloses an image processing apparatus according to claim 3, wherein the block region recognition means comprises

block characteristic quantity extraction means for extracting block characteristic quantities from each of the block regions (see fig 5 – the blocks extracted contains a predetermined number of pixels based on the sized of the objects),

mapping means for mapping the block characteristic quantities into a two-dimensional space (see fig 6 – the image is in two dimension)

type output means having a type distribution map defines the types at respective coordinates in the two-dimensional space, the type output means for outputting the types indicated by the type distribution map at coordinates of the block characteristic quantities mapped in the two-dimensional space as the types of the block regions (see fig 6 – each block extracted is its own color, red, green and blue).

One skilled in the art would include type output means because to identify regions which are similar to each other, and see whether these regions are adjacent to each, so these similar adjacent regions are combined to create a ore whole object image; the more

portions of an object image is attached together the more accurate the recognition results will be.

With regards to claim 6, an extension to the arguments to claim 4, Holter discloses an image processing apparatus according to claim 3, wherein the block characteristic quantity extraction means extracts a color (see fig 6 – each block in the image has its own color component), a lightness component (see fig 6 – each pixel in image in fig 6 represents the intensity of the image at the position) and a structural component of each of the block regions as the block characteristic (see fig 6 – each block regions in fig 6 image are rectangles).

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Corset ('668) in view of Ohmae ('787) and Holter ('859) as applied to claim 4 further in view of Shiratani (US pat no 6,418,238).

Corset, Ohmae and Holter disclose all of the claim elements / features as discussed above in rejection for claim 4 and incorporated herein by reference, but fail to disclose self-organizing map. Shiratani discloses a two-dimensional space is a self-organizing map wherein neurons having a learning ability are laid out in the form of a matrix (see col. 10 lines 33 – 36). It would have been obvious to one having ordinary skill in the art at the time of the invention was made to include self-organizing map to learn because to adapt to multiple different kind of image data to, so the system does not require a



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manual image processing change on the image, where it can be done by the learning system.

4. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corset ('668) in view of Ohmae ('787) as applied to claims 1 and 3, further in view of Nagarajan (US pat no 7,039,232).

With regards to claim 11, Corset and Ohmae disclose all the limitations discussed in claim 1, but do not disclose recognizing the type of each of the object regions is determined as the type of the block regions occurring most frequently therein.

Nagarajan discloses recognizing the type of each of the object regions is determined as the type of the block regions occurring most frequently therein (see column 2, lines 34 to 42, the one with the most predominant tags gets assign a new tag). One skilled in the art would include choosing the most predominant occurrence region in an image because the region type with the most predominant regions is either an object image, or the background of the image, allowing the system identifies areas in the image which is the foreground or background, which improve object detection in an image.

With regards to claim 12, see the rationale and rejection for claim 11.

5. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corset ('668) in view of Ohmae ('787) as applied to claims 1 and 3, further in view of Bishop (US pat no 6,603,877).

With regards to claim 13, Corset and Ohmae disclose all the limitations discussed in claim 1, but do not disclose calculating a type reliability value representing likelihood of each of the object regions being of the recognized type. Bishop discloses calculating a type reliability value representing likelihood of each of the object regions being of the recognized type (see column 2, lines 1 to 15, the preliminary likelihood value is read as type reliability value). One skilled in the art would include calculating a type reliability value because to examiner those higher likelihood values to find if there is any defect areas within the object image or foreground image, which improves quality of the image.

With regards to claim 14, see the rationale and rejection for claim 13.

### Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex Liew whose telephone number is (571)272-8623. The examiner can normally be reached on 9:30AM - 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Alex Liew

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8/29/07

A handwritten signature in black ink, reading "Matthew C. Bella". The signature is fluid and cursive, with the first name "Matthew" and last name "Bella" clearly legible, and "C." in the middle.

MATTHEW C. BELLA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600